

US-PAT-NO: 5300554

DOCUMENT-IDENTIFIER: US 5300554 A

TITLE: **Aqueous contact adhesive** dispersions, process for their preparation, and their use

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Abstract Text - ABTX (1):

The invention relates to **aqueous contact adhesive** dispersions containing, based on the total weight of the dispersion, from 40 to 70% by weight of a copolymer prepared by emulsion polymerization, where the copolymer contains

TITLE - TI (1):

**Aqueous contact adhesive** dispersions, process for their preparation, and their use

Brief Summary Text - BSTX (2):

The invention relates to **aqueous contact adhesive** dispersions based on vinyl ester-acrylate copolymers, to a process for their preparation, and to their use.

Brief Summary Text - BSTX (7):

The use of dispersions based on E/VAc in contact adhesive processes can be improved by the use of plasticizers (EP 321 868 A2). The use of such dispersions is also improved if formulated with resins which act as tackifiers and if small amounts of organic solvents are added (EP 315 070 A2, U.S. Pat. No. 4,975,481). Another process describes the **foaming** of the applied adhesive (based on **ethylene-vinyl acetate**) before the two parts to be joined are bonded (U.S. Pat. No. 4,960,802). The use of a mixture of two dispersions of low and high glass transition temperature is described in DE 39 20 935 A1. The use of such dispersions as contact adhesives results in good peel strengths, but there is no mention of the static load-bearing capacity of the adhesive bonds. The preparation of a contact adhesive whose copolymer is distinguished by a very broad molecular weight distribution is described in U.S. Pat. No.

Brief Summary Text - BSTX (9):

The object was, therefore, to find an **aqueous contact adhesive** which gives peel-resistant and/or shear resistant adhesive bonds and has good adhesion to various substrates and high cohesion at elevated temperatures, even without further formulation.

Brief Summary Text - BSTX (12):

The invention relates to **aqueous contact adhesive** dispersions containing, based on the total weight of the dispersion, from 40 to 70% by weight of a copolymer which has been prepared by emulsion polymerization, whose glass transition temperature is in the range from -20 to +20.degree. C. and whose Fikentscher K value is between 50 and 80, wherein the copolymer contains

Claims Text - CLTX (1):

1. An **aqueous contact adhesive** dispersion which contains, based on the total weight of the dispersion, from 40 to 70% by weight of a copolymer which has been prepared by emulsion polymerization, whose glass transition temperature is in the range from -20 to +20.degree. C. and whose Fikentscher K value is between 50 and 180, wherein the copolymer comprises the following components;

Claims Text - CLTX (11):

2. An **aqueous contact adhesive** dispersion as claimed in claim 1, wherein the vinyl esters (a) are selected from the group consisting of vinyl acetate, vinyl propionate, vinyl laurate, vinyl esters of the saturated .alpha.-branched monocarboxylic acids having 9 carbon atoms, and mixtures of said monomers.

Claims Text - CLTX (12):

3. An **aqueous contact adhesive** dispersion as claimed in claim 1 wherein the acrylic acid esters (b) are selected from the group consisting of n-butyl acrylate, 2-ethylhexyl acrylate, and mixtures thereof.

Claims Text - CLTX (13):

4. An **aqueous contact adhesive** dispersion as claimed in claim 1, wherein the methacrylic acid esters (c) are selected from the group consisting of

methyl methacrylate, tert-butyl methacrylate, ethyl methacrylate, n-propyl methacrylate, i-propyl methacrylate, and mixtures of said monomers.

Claims Text - CLTX (14):

5. An aqueous contact adhesive dispersion as claimed in claim 1, wherein the ethylenically unsaturated compounds (d) which cause crosslinking are selected from the group consisting of acrylamidoglycolic acid (AGA), methylacrylamidoglycolic acid methyl ester (MAGME), 2-acrylamido-2-methylpropanesulfonic acid (AMPSA), N-methylolacrylamide, N-methylolmethacrylamide, N-methylolallyl carbamate, alkyl ethers of N-methylolacrylamide, alkyl esters of N-methylolacrylamide, alkyl ethers of N-methylolmethacrylamide, alkyl esters of N-methylolmethacrylamide, alkyl ethers of N-methylolallyl carbamate and alkyl esters of N-methylolallyl carbamate.

Claims Text - CLTX (15):

6. An aqueous contact adhesive dispersion as claimed in claim 1, wherein the comonomer (e) is acrylic acid or methacrylic acid.

Claims Text - CLTX (16):

7. An aqueous contact adhesive dispersion as claimed in claim 1, wherein the comonomer (f) is acrylamide.

Claims Text - CLTX (17):

8. An aqueous contact adhesive dispersion as claimed in claim 1, wherein the comonomer (g) is selected from the group consisting of 2-hydroxyethyl acrylate and 2-hydroxypropyl acrylate.

Claims Text - CLTX (18):

9. An aqueous contact adhesive dispersion as claimed in claim 1, wherein the comonomers (h) are alkali metal salts of vinylsulfonic acid.